Future Financing Model: Oregon's VMT Pilot Program

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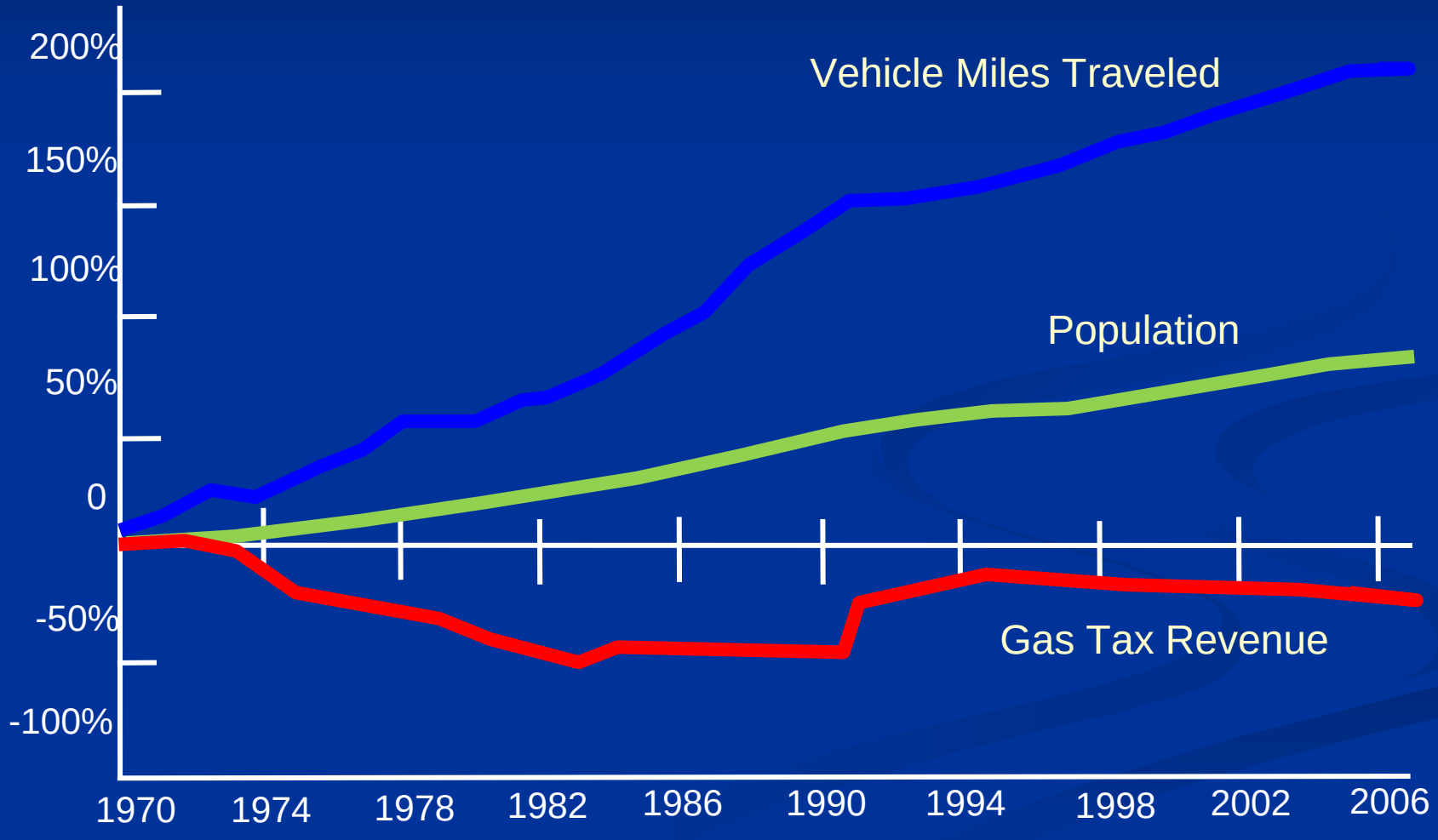
James Whitty, Manager
Office of Innovative Partnerships
and Alternative Funding

Transportation Funding in the Age of Fuel Efficiency

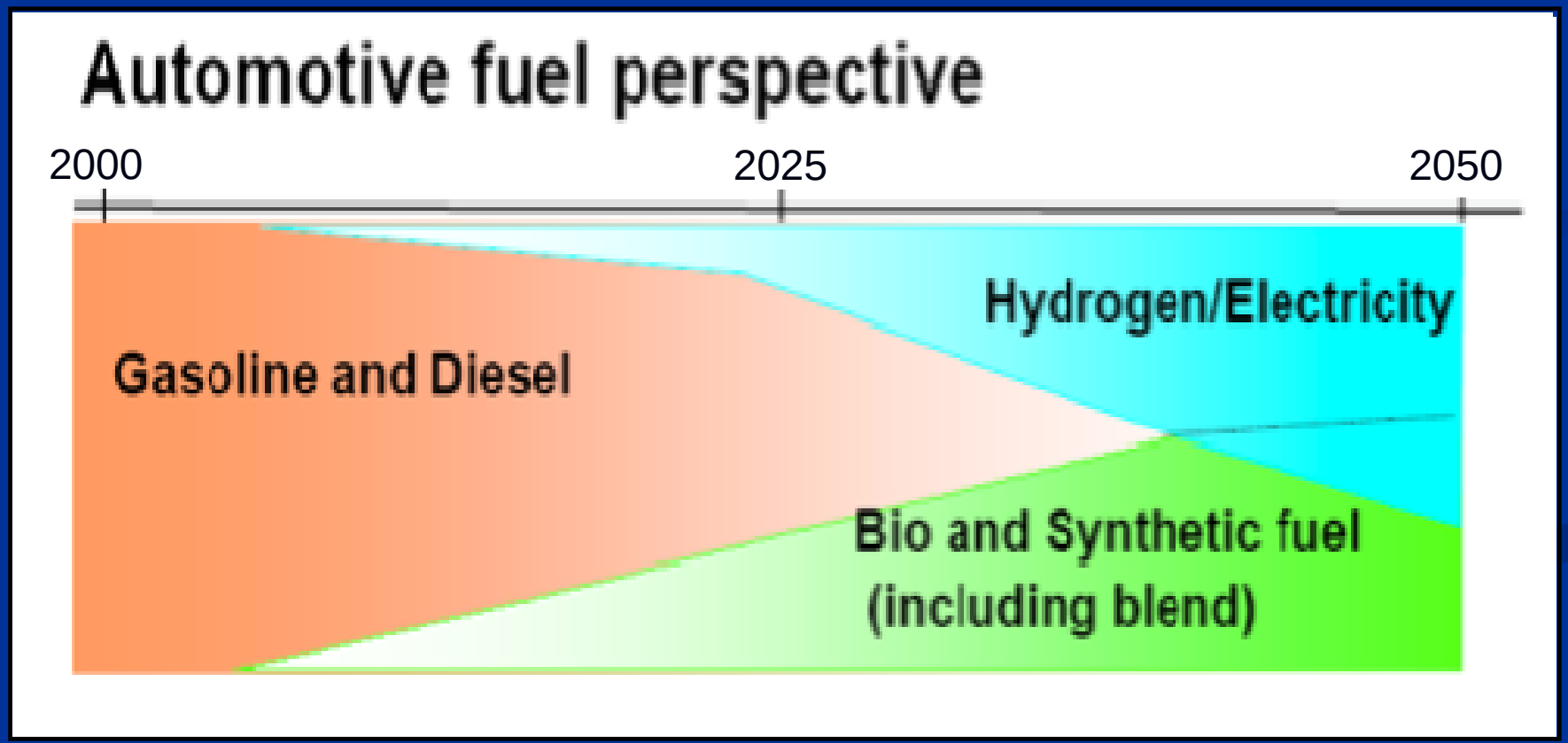
- Federal government had $31.7 billion in receipts from fuel taxes in 2009, the lowest in six years
- State fuel tax receipts experienced similar decline
- CAFE standards for 2025 raised 80 percent
- Standard vehicles with 100 percent electric motive power entered marketplace in 2010
- Plug-in hybrid vehicles enter marketplace in 2012

Revenues have not kept pace with VMT growth



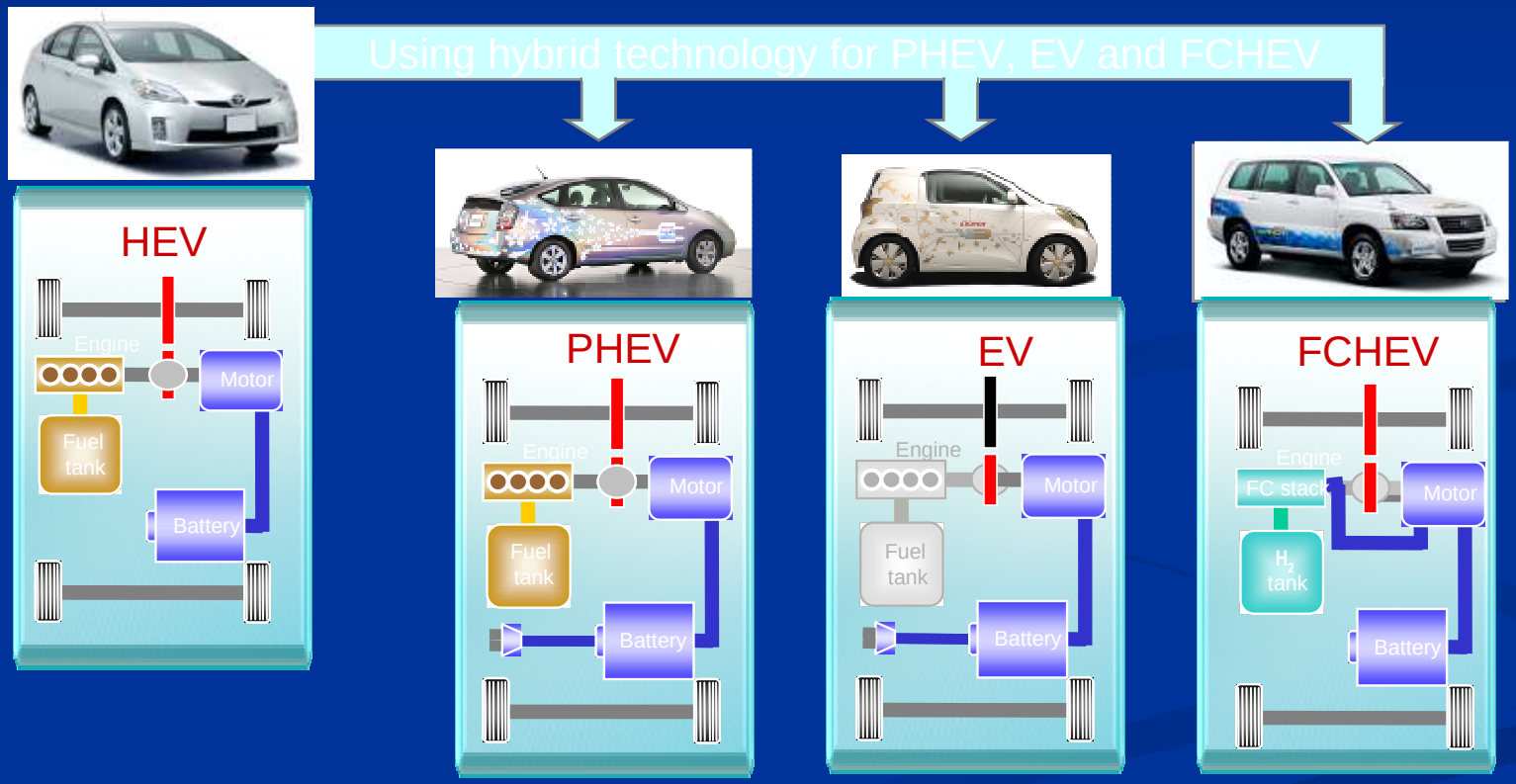
For the near to mid-term future, petrol and diesel will be the main automotive fuel

The US has instituted policies to drastically reducing fuel consumption and CO2 emissions of petrol and diesel cars through technical innovation and better efficiency



Choice: Hybrid Technology Strategic

(with applications in many future technologies)



Effect of improving fuel efficiency when gas excise tax and VMT are held constant

Current (EMFAC 2007)

1 million auto and light truck VMT

÷ 19.9 mpg

= 50,250 gallons of gasoline

×18.4¢ Fed gas excise tax

= $9,246 in nominal revenues

- 39%

Estm. 2016 CAFE Standard

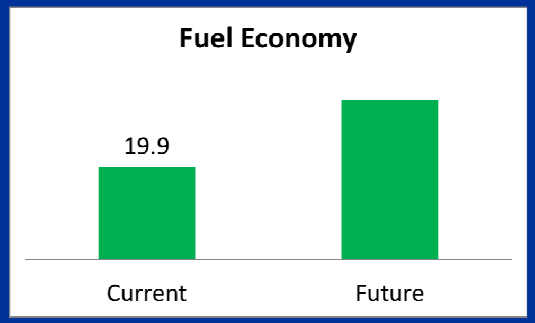
1 million auto and light truck VMT

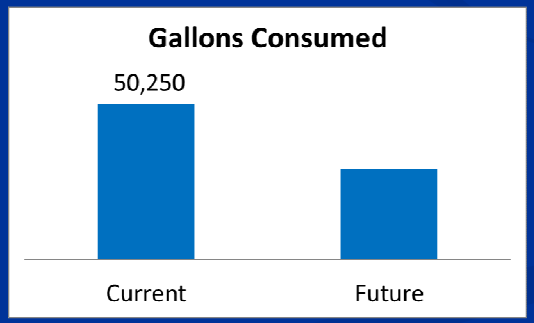
÷ 32.8 mpg (estimated)

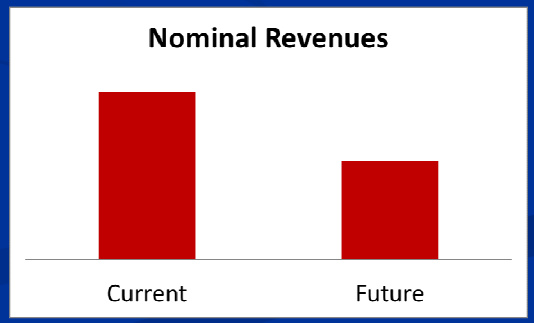
= 30,488 gallons of gasoline

×18.4¢ Fed gas excise tax

= $5,610 in nominal revenues







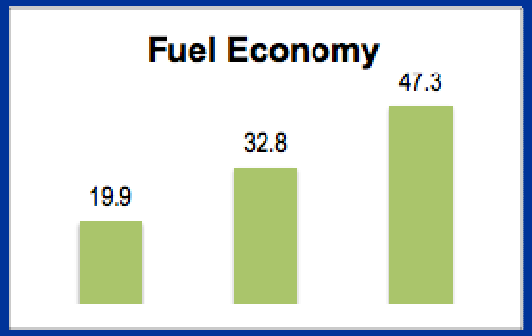
Assuming only 5% annual construction cost growth,
this is purchasing power of only $1,550 – an 80 % reduction!

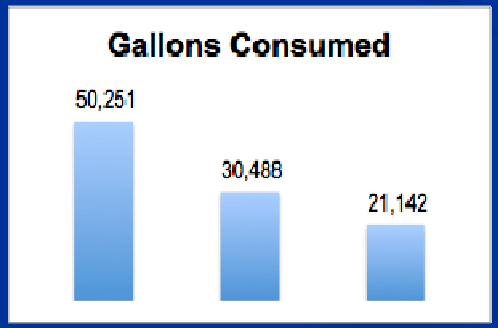
Effect of improving fuel efficiency when gas excise tax and VMT are held constant

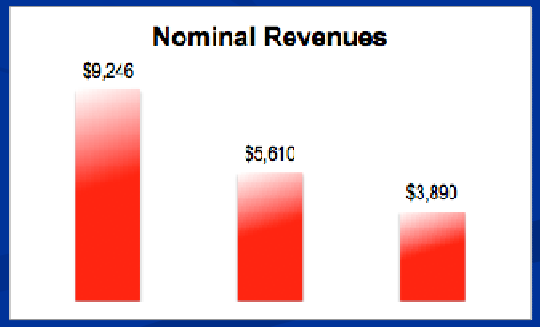
Current (EMFAC 2007)	Estm. 2016 CAFÉ Standard	Estm. 2025 CAFÉ Standard
1 million auto and light truck VMT	1 million auto and light truck VMT	1 million auto and light truck VMT
÷ 19.9 mpg	÷ 32.8 mpg (estimated)	÷ 47.3 mpg (estimated)
= 50,250 gallons of gasoline	= 30,488 gallons of gasoline	= 21,142 gallons of gasoline
×18.4¢ Fed gas excise tax	×18.4¢ Fed gas excise tax	×18.4¢ Fed gas excise tax
= $9,246 in nominal revenues	= $5,610 in nominal revenues	= $3,890 in nominal revenues

39%

58%





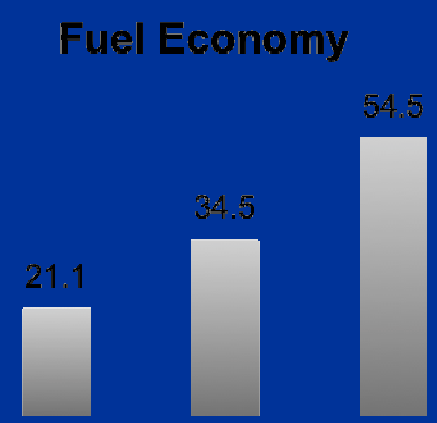


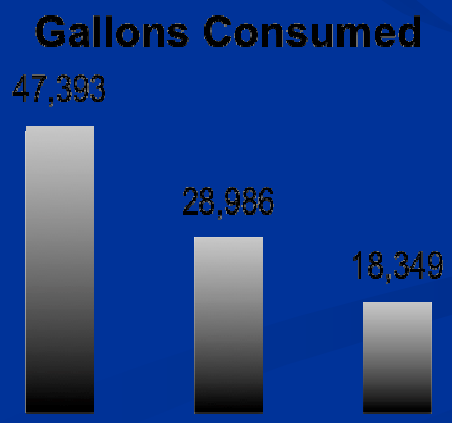
Effect of improving fuel efficiency when State fuel tax and VMT are held constant

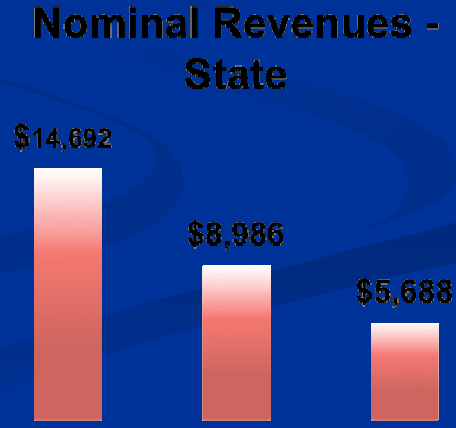
Current	Estm. 2016 CAFE Standard	Estm. 2025 CAFE Standard
1 million auto and light truck VMT	1 million auto and light truck VMT	1 million auto and light truck VMT
÷ 21.1 mpg	÷ 34.5 mpg (mandated)	÷ 54.5 mpg (mandated)
= 47,393 gallons of gasoline	= 28,986 gallons of gasoline	= 18,349 gallons of gasoline
× 31¢ Oregon State fuel tax	× 31¢ Oregon State fuel tax	× 31¢ Oregon State fuel tax
= $14,692 in nominal revenues	= $8.986 in nominal revenues	= $5,688 in nominal revenues

- 42%

- 63%





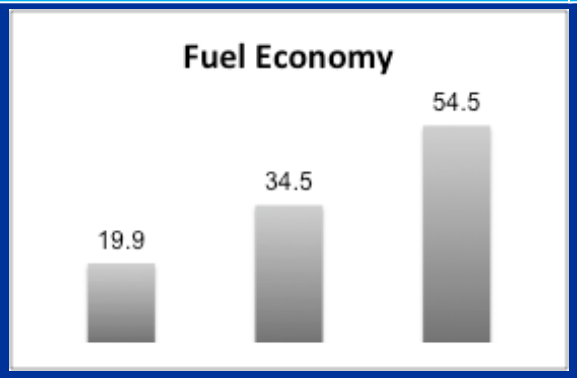


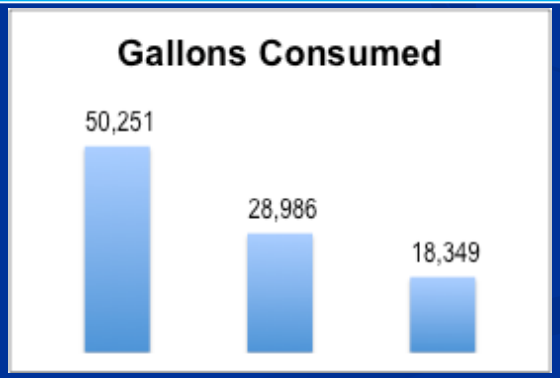
Effect of improving fuel efficiency when State fuel tax and VMT are held constant

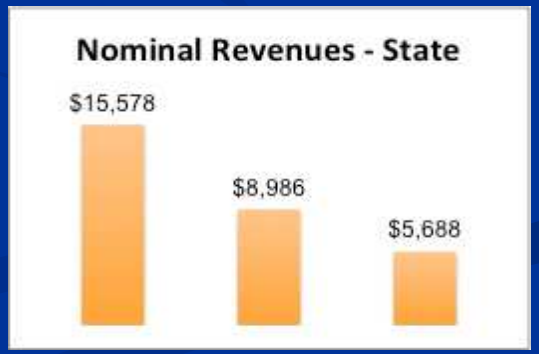
Current (EMFAC 2007)	Estm. 2016 CAFÉ Standard	Estm. 2025 CAFE Standard
1 million auto and light truck VMT	1 million auto and light truck VMT	1 million auto and light truck VMT
÷ 19.9 mpg	÷ 34.5 mpg (mandated)	÷ 54.5 mpg (mandated)
= 50,250 gallons of gasoline	= 28,986 gallons of gasoline	= 18,349 gallons of gasoline
× 31¢ Oregon State fuel tax	× 31¢ Oregon State fuel tax	× 31¢ Oregon State fuel tax
= $15,578 in nominal revenues	= $8.986 in nominal revenues	= $5,688 in nominal revenues

- 42%

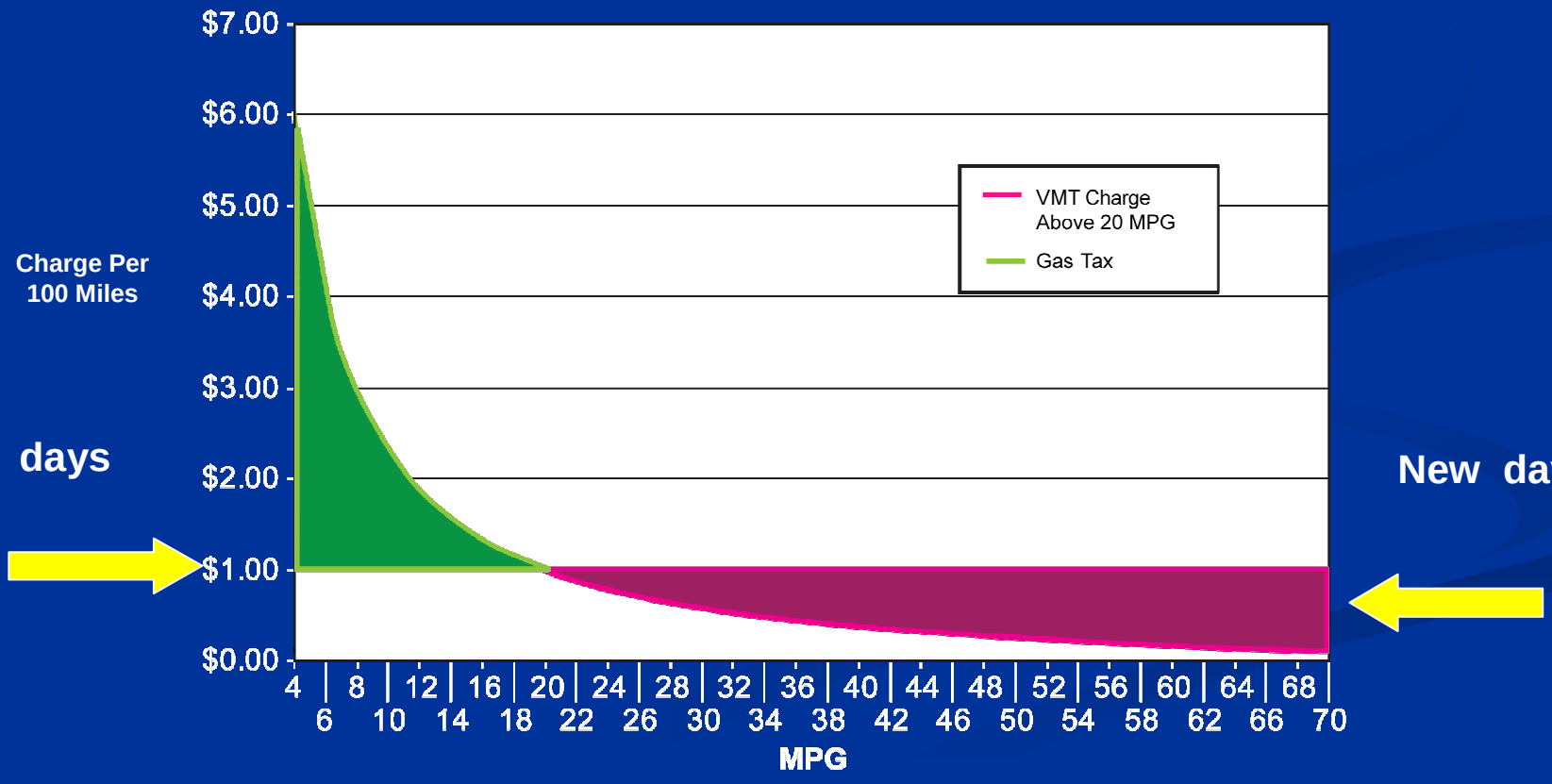
- 63%







Old Revenues Vs. New Revenues

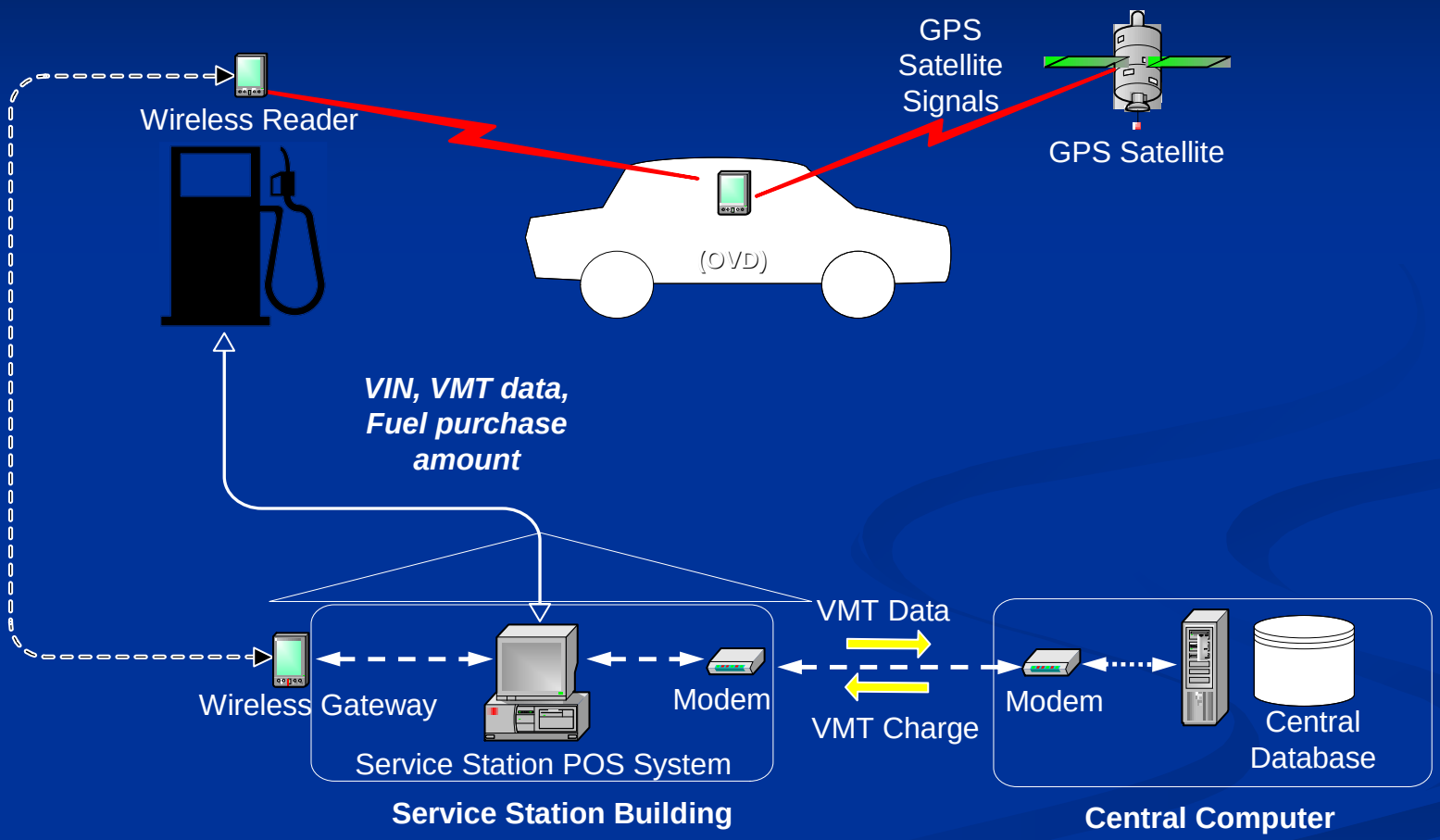


Road User Fee Task Force

Legislative Mandate

"To develop a design for revenue collection for Oregon's roads and highways that will replace the current system for revenue collection."

The Old Vision: A Pay-at-the-Pump Model



The Receipt

csr
R# 1 S# 1 T# 882316 10:55 AM
06/09/06

Leathers Fuels
11421 SE Powell Blvd
Portland, OR 97266

Pump# 1 Unleaded			
19.50	@	2.549	49 .71
ST Fuel Tax	@	.24	(4.68)
VMT Fee	:		5.12
Rush Hour	:	40	
In-Oregon	:	28.6	
Non-Oregon	:	0	
No Signal	:	0	
		Subtotal	50.15
		Total	50.15
		Cash	50.15

Thank You !

Fuel tax deducted from fuel purchase price

Mileage fee imposed as part of fuel purchase

Assessment of Pay-at-the-Pump Model

Pluses

- Met policy objectives
  - Provides gas tax credit
  - Covers all roads
  - Charges only in-state travel
  - Easy for all motorists to use
  - Protects motorist privacy
  - Cost effective operations
  - Reliable
  - Enforceable
  - Seamless transition
  - Minimal private sector burden
  - Allows congestion pricing
  - Reduces overall system risk

Minuses

- Long period for development and implementation
- Slow technological evolution
- Does *not* cover vehicles not visiting commercial fueling stations
- Public concerns about privacy and how system would work

National Support for VMT

- National Surface Transportation Policy & Revenue Study Commission, 2007
- American Association of State Highway Transportation Officials, 2008
- National Surface Transportation Infrastructure Financing Commission, 2009
- Miller Commission, 2010

National Surface TRANSPORTATION POLICY AND REVENUE STUDY COMMISSION

AASHTO THE VOICE OF TRANSPORTATION

NATIONAL SURFACE TRANSPORTATION INFRASTRUCTURE FINANCING COMMISSION

Problem: Pay-at-the-Pump was a *Closed System*

"A *closed system* is an internally integrated system controlled by a single entity with essential components that cannot be substituted by other external components which could perform the same functions"

In essence, there is only one way to do it

Public Concerns

- Privacy
  - Discomfort with technology
  - A government mandated device
- Confidence in system
  - Efficiency
  - Fairness
  - Perceptions of large and costly bureaucracy
- Rate structure
  - Flat rate
  - Rate equity

Public Acceptance: Three steps

1. Determine public attitudes and expectations
2. Design mileage charging system for public needs
3. Implement education and communications program

What the Public Wants

Keep it simple!

Problem: Simple depends on the individual

Observations Concerning Mobile Technologies Circa 2010

- Large numbers of motorists use all electronic toll technology
- Citizens around globe apprehensive about government mandates for GPS in passenger vehicles
  - The United States
  - The United Kingdom
  - The Netherlands
  - Singapore
- Citizens around globe use GPS in mobile phones purchased in marketplace
- Mobile phone/computer technologies evolves with consumer demand
- Market for smart devices in passenger vehicles now emerging

New Goal: Build a Road User Charging System Based on Existing Realities of the Marketplace

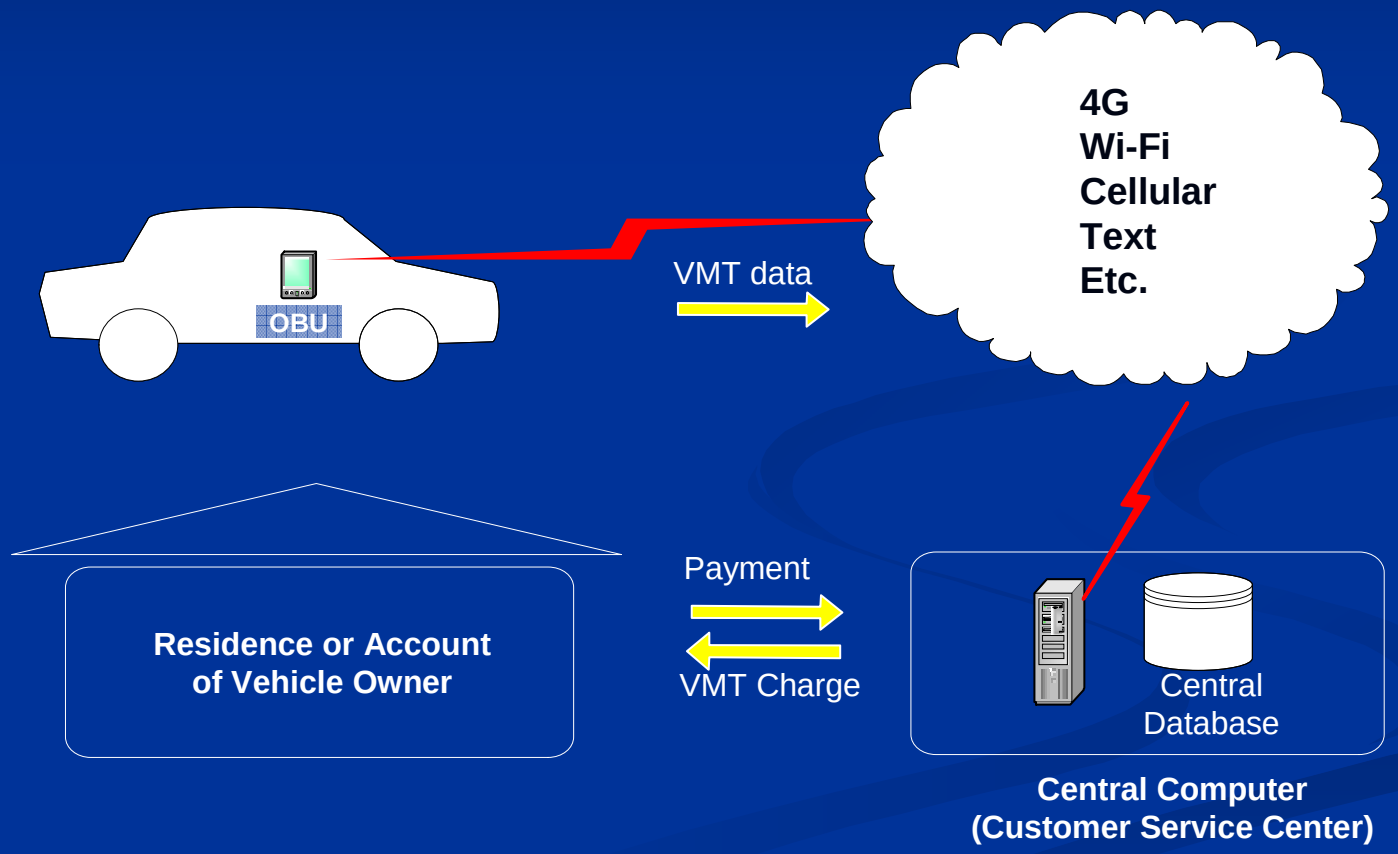
- Motorist Choice for Compliance. Enable motorists to choose their method of compliance from certified options
- No Mandate for GPS. Enable options for wireless reporting of mileage from the odometer and from technologies with vehicle location capability
- Open Technology Platform. An open system for data collection that allows technologies to evolve with motorist preferences
- Public Private Partnerships. Tap into market forces to allow the public to *choose* either government or private sector provision of on-vehicle technologies, data collection and payment services

What is an *Open System*?

"An integrated system based on common standards and an operating system accessible to the marketplace whereby components performing the same function can be readily substituted or provided by multiple providers"

There are multiple ways to do it

Electronic Reporting Under an Open System



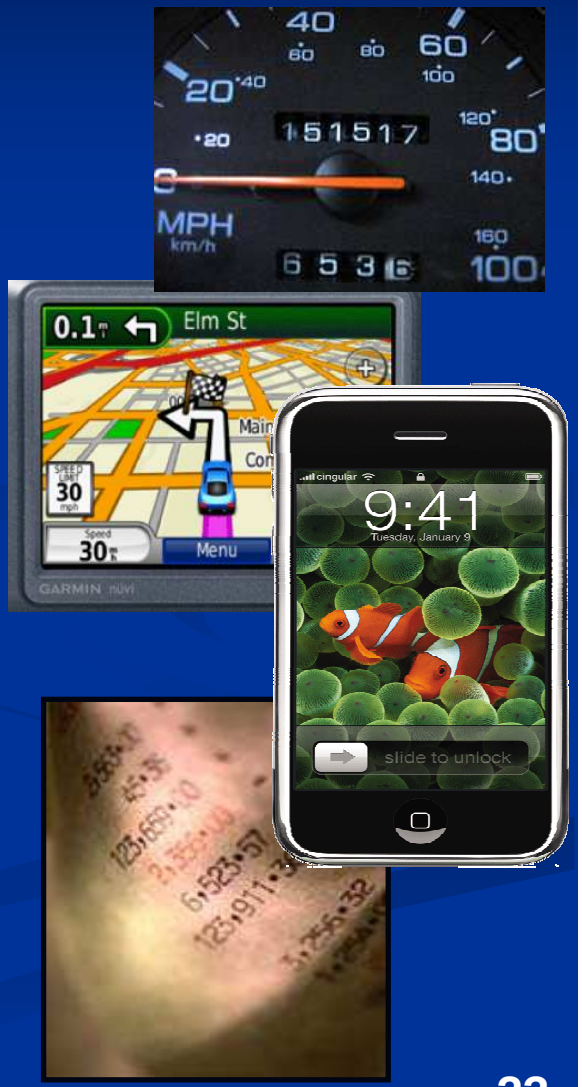
Four Compliance Methods

Electronic Reporting

- **Basic**. Wireless transfer of mileage date directly from odometer
- **Advanced**. Wireless transfer of mileage data from on-board unit with vehicle location capability

Subscription

- **Flat Charge**. Purchase unlimited mileage per year
- **Subscription Charge**. Purchase a fixed amount of miles per year



"… the unfamiliar, the vaguely perceived, the mysterious, the hidden, the unexpected are all apt to be threatening. One way of rendering them familiar, predictable, manageable, controllable, i.e., unfrightening, and harmless, is to know them and to understand them."

Abraham Maslow

The Opportunity

- Strong policy case for application of VMT now to plug-in hybrids and electric vehicles
- Enactment of a small, partial program to electric vehicles will
  - Enable development of the mileage fee collection system in a small risk environment
  - Enable collection system to grow as electric vehicle market grows
  - Allow the motoring public to view an actual mileage use fee collection system in operation
  - Potentially provide the legislature with confidence to add vehicle groupings as comfort with mileage fee system grows

Oregon Road User Charge Legislation

House Bill 2328

- Mandate owners of electric vehicles and plug-in hybrids vehicles to either periodically report miles driven or pre-pay an annual amount in lieu of reporting
- Direct Oregon DOT to develop compliance methods, one of which must not involve vehicle location technology
- Provide for motorist choice of compliance method
- Allow ODOT to charge all mileage reported

Road User Charge Legislation (cont'd)

- Direct Oregon DOT to establish standards under an open system for technology used and methods for identifying vehicles and reporting miles driven.
- Road user charge to begin July 2015 for 2016 model year
- Transitional rate of 0.85 cents per mile, increasing to 1.56 cents per mile in July 2018
- Allow creation of public private partnerships for on-board technology, mileage data collection and payment collection
- Protected personally identifiable information
- Establish offsets or refunds of gas tax paid and driving on private property

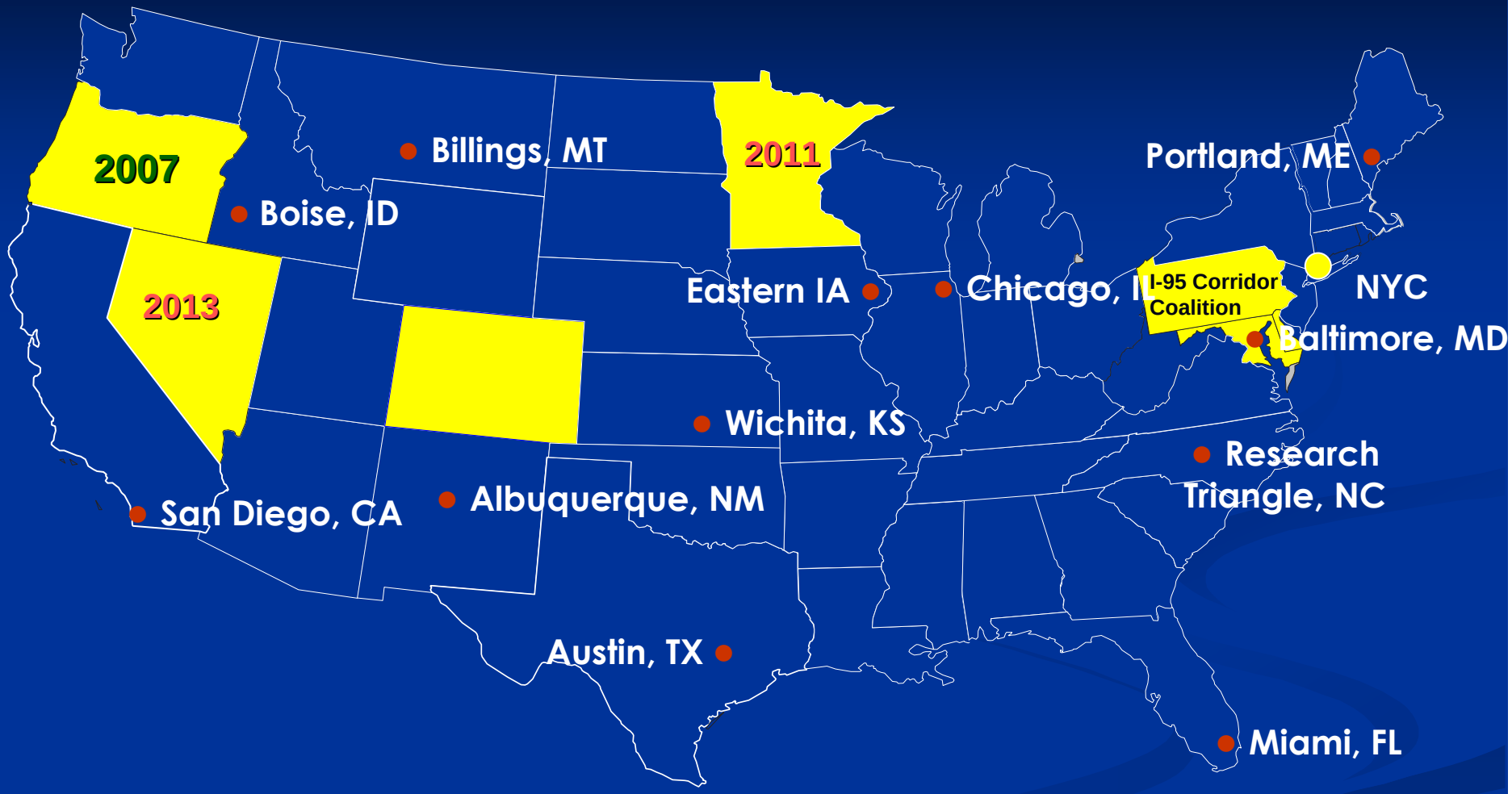
Road User Charge Legislation *Results*

- Supported by the Governor
- Passed through Oregon House Transportation Committee on a bipartisan vote
- Passed through Oregon House Revenue Committee on a bipartisan vote
- Sent to Joint Ways and Means Committee

VMT Work Underway in Oregon

- **Assessing methods for compliance**
  - Administrative viability
  - Administrative costs
  - Enforcement capabilities
  - Urban and rural impacts
- **Technology and systems**
  - Integration with other systems
  - Business rules
  - Market rules
  - Establish common standards
  - Certification agency
- **Preparation of Legislation for 2013**
  - Motorist choice of compliance method
  - Open system principles

VMT Charging Pilot Projects in the USA



- University of Iowa Field Tests *(completed 2010)*
- Pilot projects completed, underway and under development

What Congress Should Do

- Direct FHWA to fund research into VMT collections systems at federal and state levels
- Fund for several state pilot programs under development
- Fund a multi-state pilot program